

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

RESTORATION AND MANAGEMENT OF DECLINING HABITATS (ACRE)

CODE 643

MONTANA TECHNICAL GUIDE

SECTION IV

DEFINITION

Restoring and conserving rare or declining native vegetated communities and associated wildlife species.

PURPOSE

- Restore land or aquatic habitats degraded by human activity.
- Provide habitat for rare and declining wildlife species by restoring and conserving native plant communities.
- Increase native plant community diversity.
- Management of unique or declining native habitats.
- Create a plant community that can progress through successional states towards the reestablishment of historic climax plant communities on selected habitats.
- Cropland reclamation to native vegetation.

NOTE: NRCS uses the term "wildlife" to include all animals, terrestrial and aquatic.

CONDITIONS WHERE PRACTICE APPLIES

On any landscape which once supported and is capable of supporting or currently supports the habitat to be restored or managed.

Under the Conservation Reserve Program (CRP), this practice may apply but it is not intended for a goal of absolute restoration.

Minimum acreage requirement for each habitat type

proposed for restoration is ten acres. Except for glacial pothole ponds and peatlands, the minimum size is a combination of wetlands totaling one acre.

This practice is to restore or reclaim the functions and values of rare or declining native vegetative habitats. The U.S. Department of Interior--National Biological Service<sup>1/</sup> and the U.S. Department of Agriculture--Natural Resources Conservation Service in Montana has identified several habitats in Montana as rare or declining native vegetative habitats. They are:

- 1) Fescue grasslands in the valleys of western Montana
- 2) Sagebrush steppe in southwest and central Montana
- 3) Old growth ponderosa pine (*Pinus ponderosa*) forests in the northern Rocky Mountains and Intermountain West
- 4) Northern mixed grass prairie of the Brown Glaciated Plains
- 5) Northern mixed grass prairie of the Northern Dark Brown Glaciated Plains
- 6) Montana's riparian forests
- 7) Woody hardwood draws
- 8) Glacial pothole ponds
- 9) Peatlands in Montana.

<sup>1/</sup> "Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation,"  
USDI--National Biological Service, Biological Report 28,  
February 1995. REFERENCE APPENDIX B.

NOTE: This type of font (AaBbCcDdEe 123..) indicates NRCS National Standards.  
This type of font (AaBbCcDdEe 123..) indicates Montana Supplement.

## HABITAT TYPE DESCRIPTION AND LOCATION IN MONTANA

The following is a brief description of each habitat and where it applies in Montana. Refer to the Montana Major Land Resource Units map in the Field Office Technical Guide (FOTG), Section I, Maps, Management Reference Maps.

### Fescue grasslands in the valleys of western Montana:

These plant communities are dominated by Idaho fescue (*Festuca idahoensis*) rough fescue (*Festuca campestris*), bluebunch wheatgrass (*Pseudoroegneria spicata*), lupine (*Lupinus* spp.), and fringed sagewort (*Artemisia frigida*). They are located in Major Land Resource Units 44-I, 44-IA, and 44-II (Northern Rocky Mountain Valleys).

### Sagebrush steppe in southwest and central Montana:

These plant communities are dominated by big sagebrush (*Artemisia tridentata*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), green needlegrass (*Nassella viridula*), prairie junegrass (*Koeleria macrantha*), shrubby cinquefoil (*Pentaphylloides floribunda*), and various milkvetches (*Astragalus* spp.). They are located in Major Land Resource Units 44-III, 44-IV (Northern Rocky Mountain Valleys), 46-III, and 46-IV (Northern Rocky Mountain Foothills).

### Old growth ponderosa pine (*Pinus ponderosa*) forests in the northern Rocky Mountains and the Intermountain West:

In many areas of the Montana Rockies, the first forest zone above the grassland is the ponderosa pine (*Pinus ponderosa*) climax series. This species endures dry, warm environments usually less than 5,500 feet in elevation. Associated plant communities are bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), needleandthread (*Stipa comata*), sedge (*Carex* spp.), Oregongrape (*Mahonia repens*), Rocky Mountain juniper (*Juniperus scopulorum*), and common snowberry (*Symphoricarpos albus*) in the understory. These ponderosa pine climax communities are found in Major Land Resource Units 44-I, 44-IA, 44-II (Northern Rocky Mountain Valleys), 46-III, 46-IV (Northern Rocky Mountain Foothills), 58A-VII, 58A-VIII, 58A-IX, 58A-X

(Northern Rolling High Plains), and 60A, 60B (Pierre Shale Plains).

### Northern mixed grass prairie of the Brown Glaciated Plains:

These plant communities are dominated by bluebunch wheatgrass (*Pseudoroegneria spicata*), green needlegrass (*Nassella viridula*), western wheatgrass (*Pascopyrum smithii*), needleandthread (*Stipa comata*), milkvetch (*Astragalus* spp.), scurfpea (*Pedimelum* spp.), big sagebrush (*Artemisia tridentata*), and winterfat (*Krascheninnikovia lanata*). They are located in Major Land Resource Units 52-IV, 52-V, and 52-VI (Brown Glaciated

### Northern mixed grass prairie of the Northern Dark Brown Glaciated Plains:

These plant communities are dominated by western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Nassella viridula*), needleandthread (*Stipa comata*), little bluestem (*Schizachyrium scoparium*), silver sagebrush (*Artemisia cana*), winterfat (*Krascheninnikovia lanata*), fringed sagewort (*Artemisia frigida*), and American vetch (*Vicia americana*). They are located in Major Land Resource Unit 53A (Northern Dark Brown Glaciated Plains).

### Montana's riparian forests:

These plant communities are dominated by plains cottonwood (*Populus deltoides*), narrowleaf cottonwood (*Populus angustifolia*), black cottonwood (*Populus trichocarpa*), willow (*Salix* spp.), and green ash (*Fraxinus pennsylvanica*) climax series. Associated plant communities are redosier dogwood (*Cornus stolonifera*), western snowberry (*Symphoricarpos occidentalis*), American plum (*Prunus americana*), silver buffaloberry (*Shepherdia argentea*), western yarrow (*Achillea millefolium*), western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Nassella viridula*), prairie cordgrass (*Spartina pectinata*), and basin wildrye (*Leymus cinereus*). These riparian forests are located along the major streams, rivers, and their tributaries across Montana.

### Woody hardwood draws:

Woody hardwood draws support the green ash (*Fraxinus pennsylvanica*), boxelder (*Acer negundo*), and American elm (*Ulmus americana*) plant community types. Associated plant communities in

the understory are common snowberry (*Symphoricarpos albus*), western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Nassella viridula*), common chokecherry (*Prunus virginiana*), and Woods' rose (*Rosa woodsii*). They are located in Major Land Resource Units 53A (Northern Dark Brown Glaciated Plains), 58A-VII, 58A-VIII, 58A-IX, 58A-X (Northern Rolling High Plains), and 60B (Pierre Shale Plains).

### Glacial pothole ponds:

Glacial potholes are depressional wetlands, which occur on the northern plains of Montana and in the intermountain valleys of Montana. The depressional wetlands of the northern plains are commonly known as prairie potholes. Prairie potholes were formed by the retreat of the continental glaciers during the Pleistocene epoch. Intermountain depressions were formed by the retreat of montane glaciers. Intermountain potholes are geomorphically and vegetatively similar to prairie potholes. Plant communities that occur in depressional wetlands tend to occur in rings or zones based on the duration of saturation and inundation. A semi-permanent pothole would have a full complement of plant zones. From the outer edge these zones are:

Low prairie – dominated by upland species such as Baltic rush (*Juncus balticus*) and western wheatgrass (*Pascopyrum smithii*).

Wet meadow – dominated by aquatic graminoids such as sedges (*Carex* spp.), rushes (*Juncus* spp.), spikerushes (*Eleocharis* spp.) and hydrophitic grasses such as reedgrass (*Calamagrostis* spp.) and mannagrass (*Glyceria* spp.)

Shallow marsh – dominated by water tolerant graminoids such as sedges (*Carex* spp.), bulrushes (*Scirpus* spp.) and cattails (*Typha* spp.)

Deep marsh – dominated by true aquatics such as pond weed (*Potamogeton* spp.)

A shallow pothole might only have a low prairie and wet meadow zones. A deep, steep sided pothole might exhibit all the zones but these would be extremely compressed. These wetlands are located in Major Land Resource Units 52-IV, 52-V, and 52-VI (Brown Glaciated Plains), 53A (Northern Dark Brown Glaciated Plains) for prairie potholes and Major Land Resource Units 44-I, 44-IA, and 44-II (Northern Rocky Mountain Valleys) for intermountain potholes.

### Peatlands in Montana:

The majority of peatlands in Montana are found west of the continental divide. The most common type of peatland found in Montana is a fen. Fens are peat accumulating wetlands. Water sources are both surface and ground water. Fens are generally classified as poor fens or rich fens. Poor fens have a low pH. Rich fens have a higher pH.

Poor fens - dominated by sphagnum mosses (*Sphagnum* spp.). Typical vascular plant communities include water sedge (*Carix aquatilis*), blister sedge (*Carix vesicaria*), and silvery sedge (*Carix canescens*). Typical grasses are bluejoint grass (*Calamagrostis canadensis*) and tufted hairgrass (*Deschampsia cespitosa*). Typical shrubs include small leaved laurel (*Kalmia microphylla*), bog laurel (*Ledum groenlandica*) and huckleberry (*Vaccinium* spp.).

Rich fens - dominated by brown mosses (*Bryum* spp., *Campyllum* spp.). Typical vascular plants include woolly fruitsedge (*Carix lasiocarpa*), Northwest Territory sedge (*Carex utriculata*), yellow sedge (*Carex flava*) and spikerushes (*Eleocharis* spp.). Typical woody plants include Drummond willow (*Salix drummondiana*), Bebb's willow (*Salix bebbiana*), bog birch (*Betula glandulosa*), and mountain alder (*Alnus incana*).

These communities are located in Major Land Resource Units 44-I, 44-IA, and 44-II (Northern Rocky Mountain Valleys).

## CRITERIA

### General Criteria Applicable to All Purposes

#### A. Site Preparation

- Planting success depends on removal of competition, species selection, seed placement, and protection of seedlings.
- Refer to the site preparation section in the FOTG, Section IV, Standard 512—Pasture and Hayland Planting for the fundamental practice alternatives needed for seeding success.
- Site preparation and remediation, if necessary, shall be sufficient for establishment and growth of selected species.
- Topsoil, existing vegetation, and other biologic resources will be salvaged where appropriate.

## B. Seed and Seeding

- Only certified, high quality and ecologically adapted native seed and plant material will be used.
- **Seeds should be placed in mineral soil about one-half inch depth and firmed to provide seed/soil contact.**
- Planting dates, and care in handling and planting of the seed or plant material will ensure that established vegetation will have an acceptable rate of survival.
- Timing and use of equipment will be appropriate for the site and soil conditions.
- Seeding rates and species mixtures will be adequate to accomplish the planned purpose.
- **Refer to FOTG, Section IV, Standard 550—Range Planting for seeding rates.**

## C. Species

- Species will be adapted to soil-site conditions.
- Species will be suitable for the planned purpose.
- **Species suited for the site will be based on site descriptions in the FOTG, Section II-E-8, Rangeland Grazed Forest Land and Native Pasture Interpretations..**
- **Select proven cultivars of species adapted to the soils, mean annual rainfall (amount & timing), and geographic area. Refer to the FOTG, Section IV, Standard 550—Range for cultivar list.**

## D. Management

- **Proper management practices will be incorporated to ensure the native plant communities are maintained.**
- Methods used will be designed to protect the soil resource from erosion.
- Vegetative manipulations to restore plant and/or animal diversity can be accomplished by prescribed burning or mechanical, biological or chemical methods, or a combination of the four.
- Where feasible prescribed burning will be utilized instead of mowing.
- Management measures must be provided to control invasive species and noxious weeds

in order to comply with state noxious weed laws.

- To benefit insect food sources for grassland nesting birds, spraying or other control of noxious weeds will be done on a “spot” basis to protect forbs and legumes that benefit native pollinators and other wildlife.
- Management practices and activities are not to disturb cover during the primary nesting period in **Montana**. Exceptions could be granted for periodic burning or mowing when necessary to maintain the health of the plant community. Mowing may be needed during the establishment period to control weeds.
- Rotate periodic planned management or other treatments throughout the restored/managed area.

## RESTORATION PRACTICES

**Native species, which represent the plant community to be restored, will be seeded in diverse mixtures. No introduced species will be seeded.**

**For the following vegetative habitats:**

- **Fescue grasslands in the valleys of western Montana;**
- **Sagebrush steppe in southwest and central Montana;**
- **Northern mixed grass prairie of the Brown Glaciated Plains; and**
- **Northern mixed grass prairie of the Northern Dark Brown Glaciated Plains:**

**Refer to the FOTG, Section IV, Standard and Specification 550—Range Planting for management guidance. Refer to the FOTG, Section II-E-8 to find the appropriate technical range site description for specifics on percent composition (% grass, % forbs, % shrubs) and the species composition of that restored climax plant community.**

**Old growth ponderosa pine (*Pinus ponderosa*) forests in the northern Rocky Mountains and the Intermountain West:**

**Refer to the FOTG, Section IV, Standards and Specifications 612—Tree/Shrub Establishment for guidance on spacing distances and 550—Range Planting for management guidance. Refer to the FOTG, Section II-E-8 to find the appropriate**

technical range site description for specifics on percent composition (% grass, % forbs, % shrubs) and the species composition of that restored climax plant community.

#### **Montana's riparian forests:**

Refer to the FOTG, Section IV, Standards and Specifications 391—Riparian Forest Buffer for guidance on species and spacing distances and 550—Range Planting for management guidance. Refer to the FOTG, Section II-E-8 to find the appropriate technical range site description for specifics on percent composition (% grass, % forbs, % shrubs) and the species composition of that restored climax plant community.

#### **Woody Hardwood draws:**

For woody hardwood draws refer to the FOTG, Section IV, Standard and Specification 391—Riparian Forest Buffer for guidance on species and spacing distances. Refer to the FOTG, Section IV, Standard and Specification 550—Range Planting for management guidance. Refer to the FOTG, Section II-E-8 to find the appropriate technical range site description for specifics on percent composition (% grass, % forbs, % shrubs) and the species composition of that restored climax plant community.

#### **Glacial pothole ponds and peatlands in Montana:**

Restoration of glacial pothole ponds and peatlands requires reestablishment of the original hydrology. Wetland plant communities generally establish from natural sources once the hydrology has been restored. No plantings and/or seedings are recommended unless determined by an on-site evaluation. The restored climax plant community should contain those species listed in the "Habitat Type Description and Location in Montana" section of this standard. Adjacent uplands will be restored to native mix or declining habitat as appropriate.

### **CONSIDERATIONS**

#### **A. Site Preparation**

When conditions will permit, prepare a firm, vegetative free seedbed and seed with a drill. Usually a seedbed cannot be prepared that is

suitable for a drilled seeding on forestland. Broadcast seeding is often the only satisfactory method.

#### **B. Seed, Seeding, and Seedling Transplanting**

Dormant grass seedings in the fall generally do well. Seeding on the snow is acceptable if snow depths are generally less than one (1) foot.

Shrub plantings and seedling transplants should be done in early spring before the buds break dormancy or late fall after plants go dormant and before the ground freezes.

For small seeded forbs and shrubs consider a carrier for even distribution of seed. Consider seeding at a 20 seeds/square foot (drilled) or 40 seeds/square foot broadcast rate rather than pounds/acre rate.

For better success in shrub establishment consider planting seedlings, plugs, and/or transplants. Plant as group plantings in appropriate landscape positions. Recommended spacing would be approximately 15 foot by 15 foot (about 200 plants/acre).

#### **C. Species**

Plant materials centers and commercial growers should be encouraged to develop, select, and assist with ecotype identifications, collection, and propagation of plant materials for habitat restorations.

Local ecotypes collected from adjacent and ecologically similar sites can also be considered.

Natural encroachment from adjacent native plants communities maybe a source of native plant propagules and eventual occupation.

Plantings of native species should be made with seed harvested from native stands in Montana or adjacent states and provinces within a geographic range of 300 miles north or 500 miles south of the planting site. The east-west range is determined by selecting seed from similar elevation and precipitation zones.

#### **D. Management**

All habitat manipulations will be planned and managed according to plant needs and soil capabilities. Recommendations for management will avoid excessive soil loss.

Haying and grazing will be planned and managed as necessary to achieve and maintain the intended purpose.

In many cases threatened and endangered species or species of concern will benefit from conservation of declining habitats. Follow-up habitat assessments shall be performed on a regular basis.

Confer with other agencies and organizations to develop guidelines and specifications for conserving or revitalizing declining habitats.

## PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each habitat type or **vegetative habitat, range site and woodland site**. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

## REFERENCES

Threatened and Endangered Species Policy.

The Endangered Species Act.

Montana State University, Montana Interagency Plant Materials Handbook. June 1990. MSU Extension Service Bulletin 69. Bozeman, MT.

## OPERATION AND MAINTENANCE

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation) and repair and upkeep of the practice (maintenance).

Any use of fertilizers, pesticides and other chemicals shall not compromise the intended purpose of this practice.

**Any grazing will be done under a prescribed grazing system, which will either maintain or lead toward the historic climax plant community.**

**Manage the plant community so that it can sustain itself as it progresses through successional states towards a steady state. Achieving the exact form, structure, and function of the plant community that existed prior to the disturbance maybe impractical, if not impossible. However, with management practices, it can lead to the development of a sustainable, resilient, and dynamic plant community.**

U.S. Dept. Agriculture—Natural Resources Conservation Service, Montana Field Office Technical Guide (FOTG), Section II-E-8.

*"Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation,"*

U. S. Department of the Interior—National Biological Service, Biological Report 28, February 1995.

**Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.**

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

**RESTORATION AND MANAGEMENT OF DECLINING HABITATS (ACRE)**

**CODE 643**

DEFINITION. Restoring and conserving rare or declining native vegetated communities and associated wildlife species.

SCOPE. This specification provides direction in establishing historic plant communities, to increase native plant community diversity, and to provide wildlife habitat.

RESTORATION and MANAGEMENT RECOMMENDATIONS: Site preparation shall be sufficient for establishment and growth of selected species. Planting success depends on removal of competition, species selection, seed placement, and protection of seedlings.

Only high quality and ecologically adapted native seed and plant material will be used. Seeding rates and species mixtures will be adequate to accomplish the planned purpose.

Species suited for the site will be based on site descriptions in the Field Office Technical Guide, Section II-E-8. Select cultivars of species adapted to the soils, mean annual rainfall, and geographic areas.

Proper management practices will be incorporated to ensure the native plant communities are maintained. Management measures will control invasive species and noxious weeds in order to comply with noxious weed laws.





**MT643-4**

512–Pasture and Hayland Planting Specification Attached

☐ **YES**

☐ NO

550-Range Planting Specification Attached

☒ YES

 **NO**

391–Riparian Forest Buffer Specification Attached

☒ **YES**

 **NO**

612-Tree/Shrub Establishment Specification Attached

☒ **YES**

☐ NO

Notes and Additional Information:

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**APPROVALS:**

## NRCS Conservationist

**Job Class**

Date \_\_\_\_\_

## Producer

**Date**